AF

PATENT
ATTORNEY DOCKET NO.: 066489-0028

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:	)
	) Confirmation No. 7100
DALPIAZ, Michael et al.	)
	) Group Art Unit: 2882
Application No.: 10/644,992	)
	) Examiner: A. C. HO
Filing Date: August 21, 2003	)
	) Customer No. 25269
For: SYSTEM FOR DETERMINING A SENSOR HOLDER	)
	)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

APPELLANT'S REPLY BRIEF UNDER 37 C.F.R. § 41.41

This Reply Brief is in furtherance of the Examiner's Answer dated October 15, 2007.

1. **Argument**

The rejection of independent claim 1, and claims 2-4, 6-15 and 28, which depend therefrom, and independent claim 16, and claims 17-19, 21-27 and 29, which depend therefrom, is improper and should be reversed.

In the Examiner's Answer, the Examiner maintains the rejection of the appealed claims and specifically indicates, in Paragraph (10) Response to Argument, that:

> "..... In addition to the automatic system mentioned above, Milnes disclosed a manual system that comprises a means (122) for selecting an area (column 3, lines 47-64). Fig. 6A depicts using a pointer to select an area (610) relative to other digitized x-ray images (602, 604, 606, 608) for the next x-ray exposure (column 5, lines 1- 15). After an area is selected, a processing unit (120, 710) moves the x-ray apparatus to the selected area to acquire the next x-ray image (column 5, lines 1-15, lines 43-55). Each x-ray image is

saved with the position of the x-ray apparatus where the x-ray image is taken (column 4, lines 10-16). The appellants assert that the processing unit disclosed by Milnes does not effect calculations of a trajectory, which gives knowledge of movement of the x-ray apparatus carried out at a certain point in time. This argument fails to consider the processes/steps necessary to carry out moving the x-ray apparatus from the present position of the x-ray apparatus, which corresponds to a position where one of a plurality of digitized x-ray images (602, 604, 606, 608) was acquired, to the next position where a new x-ray image (610) will be acquired. To implement such a move, a definite trajectory, which consists of the present position, the next position, and all the intermediate positions connecting the present position and the next position, must be determined. In other words, the x-ray apparatus must move continuously and sequentially from the present position to the next position through all of the intermediate positions along a predetermined trajectory. Furthermore, such a trajectory could only be calculated *a priori* since it would not be possible to preprogram a trajectory in response to a totally random selection of an area by a user. Without a fixed trajectory, control data could not be generated to control the x-ray apparatus because there are an infinite number of trajectories (e.g., a straight line, multiple straight lines, multiple curves) that could connect the present position and the next position. Therefore, the processing unit disclosed by Milnes must calculate a trajectory that consists of positions of the x-ray apparatus as a function of time."

Appellant respectfully disagrees with the Examiner's Response to Arguments for the reasons presented below.

Specifically, at the outset, Appellant respectfully notes that the Examiner fails to consider the *Milnes* X-ray apparatus is a general medical X-ray apparatus which operates in a generally horizontal orientation. The orientation of operation is important in that a dental X-ray apparatus on the contrary operates in a generally vertical orientation. A dental X-ray apparatus is thus used to obtain specific dental panoramic radiographies and tomograms of a patient's jaw, with the generally vertical movement in a limited area. The panoramic image includes the necessary positioning information of the emitter/sensor system relative to the position of the dental X-ray-

apparatus. Thus one of ordinary skill in the art would not look to the teachings of *Milnes*, which discloses a generally horizontally operable medical X-ray apparatus, in the field of dental X-ray-exposures.

As discussed in detail in the Appeal Brief filed on September 13, 2007 and briefly discussed herein, as shown in Figs. 1-3 (reproduced below), the present invention provides a system for positioning a dental X-ray apparatus, (page 2, line 14).

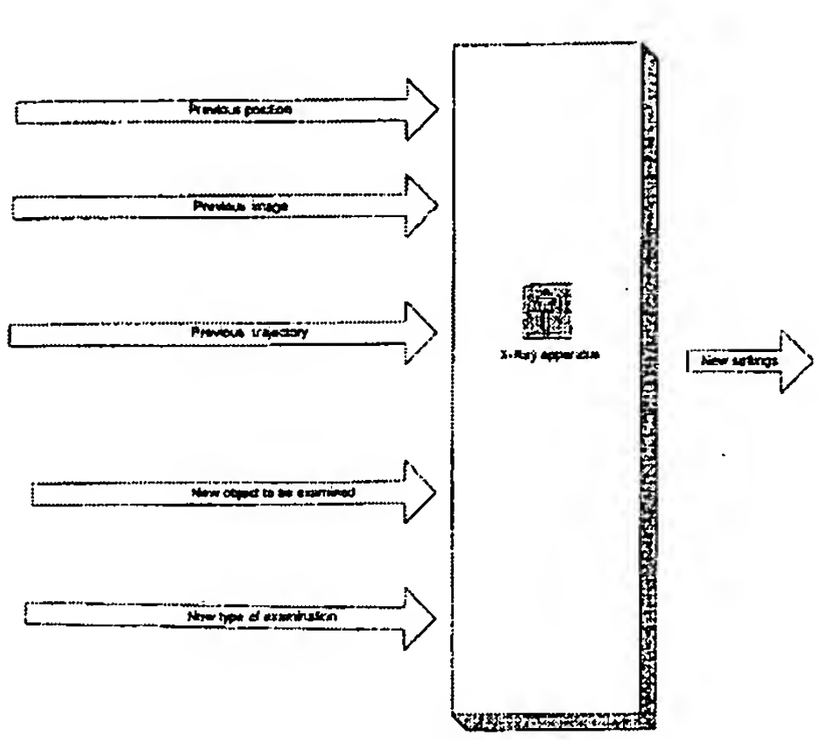


Fig. 1

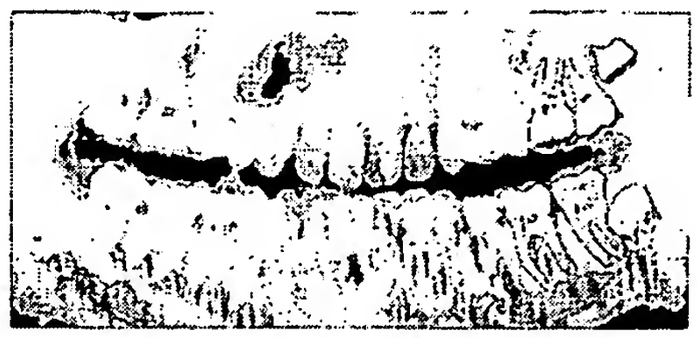


Fig. 2

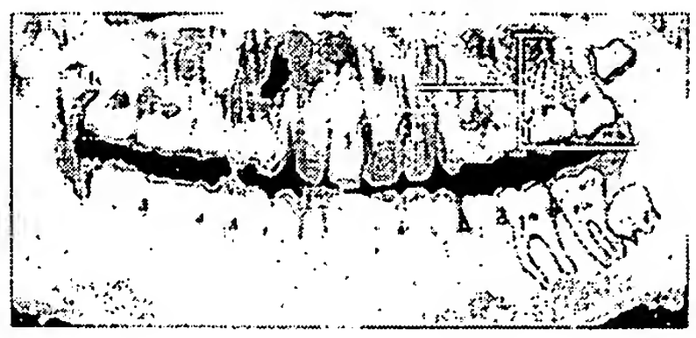


Fig. 3

Figs. 1-3 of App. Serial No. 10/644,992

The system includes a storage area, in which at least one digitized dental X-ray image and information concerning the dental X-ray apparatus assignable to the digitized dental X-ray image are stored, (page 2, lines 18-20). This information concerning the X-ray apparatus preferably relates to position parameters of the movable parts, (page 2, lines 20-23). Thus a certain area of an X-ray image can be associated with the corresponding parameters of the X-ray apparatus, (page 2, lines 23-24). Vice versa, the X-ray apparatus can be controlled by the X-ray image, (page 2, lines 24-25).

The system also includes a processing unit which effects calculations based on the digitized dental X-ray image, the relevant information concerning the dental X-ray apparatus, and the selected area, in order to ascertain control data for controlling the dental X-ray apparatus such that the selected area is covered when a new dental X-ray image is made, (page 3, lines 1-

4). The information concerning the X-ray apparatus includes coordinates of a trajectory which have been saved in relation to the digitized X-ray image, (page 4, lines 19-20). The processing unit further effects calculations of the trajectory which gives knowledge of movement of the dental X-ray apparatus carried out at a certain point of time (page 3, lines 5-8 and page 4, lines 20-21).

Milnes, as illustrated in Figs. 1-8 (especially Figs. 1 and 2; reproduced below) thereof, discloses an general medical X-ray system 100 and method including a display device 110, a gantry 130 having an X-ray generator 132, a table 140 having an X-ray sensor 142, and an X-ray control system 120 connected to the display device, the gantry and the table, (see Col. 3:32-37 of *Milnes*).

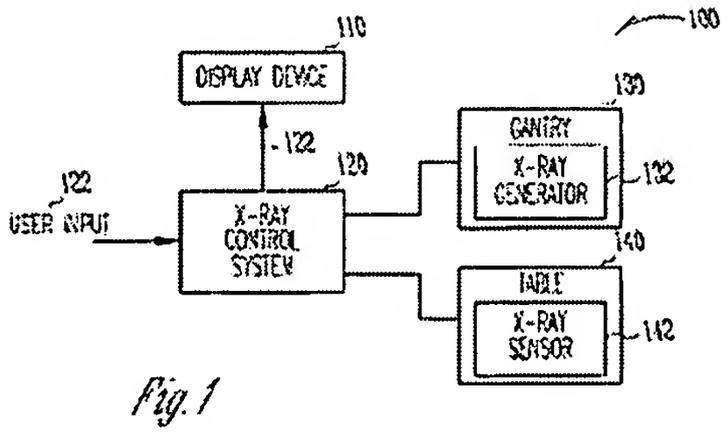


Fig. 1

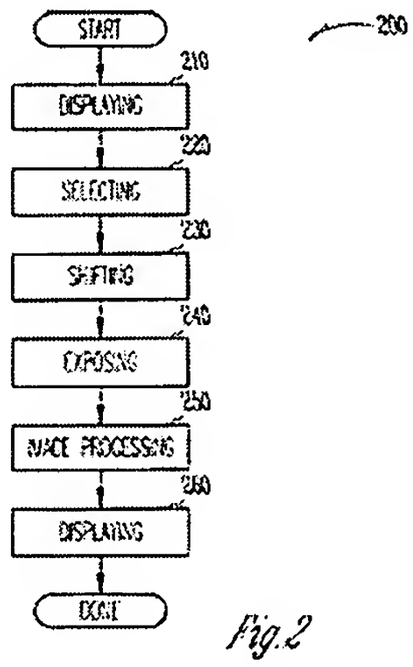


Fig. 2

Figs. 1 and 2 of *Milnes*

For *Milnes*, the X-ray control system includes user input 122 for indicating the position of the next X-ray exposure, (Col. 3:47-48). The X-ray control system receives X-ray data from the sensor, processes the data to form a static X-ray image, displays the X-ray image on the display device and shifts the X-ray generator relative to the X-ray sensor, (Col. 3:65 – Col. 4:9). The amount and direction of shift is accurately determined using data from the previous static X-ray image, (Col. 2:1-3 and Col. 7:1-4). Further, as discussed in Col. 5:43-56 of *Milnes*, the *Milnes* X-ray control system 120 automatically follows a tip of a catheter or a contrast injected into a body in order to reduce the number, size and duration of the static X-ray images. The catheter tip and the contrast injected into a body may move on a trajectory.

Therefore, whereas *Milnes* appears to disclose manual (i.e. operator controlled; see Col. 3:47 – Col. 4:16) or automatic (catheter tip/contrast based; see Col. 6:43-67) movement of the general medical X-ray apparatus, *Milnes* clearly does not teach or fairly suggest a dental X-ray apparatus including, "a processing unit which effects calculations based on the digitized dental X-ray image, the relevant information concerning the dental X-ray apparatus, and the selected area, in order to ascertain control data for controlling the dental X-ray apparatus such that the selected area is covered when a new dental X-ray image is made, the information concerning the X-ray apparatus comprises coordinates of a trajectory which have been saved in relation to the digitized X-ray image, the processing unit further effects calculations of the trajectory which gives knowledge of movement of the dental X-ray apparatus carried out at a certain point of time," as recited in independent claim 1.

Thus based at least on the distinctions specified above, the distinctions noted in the September 13, 2007 Appeal Brief, and the further amendments to claim 1 per the Amendment under 37 C.F.R. §1.111 filed on September 11, 2006, Appellant respectfully asserts that *Milnes* fails to teach or fairly suggest a system for positioning a dental X-ray apparatus, wherein, "the processing unit further effects calculations of the trajectory which gives knowledge of movement of the dental X-ray apparatus carried out at a certain point of time," as recited in independent claim 1.

With regard to the teachings of *Relihan*, which has been cited as teaching or suggesting the features or steps recited in dependent claims 10, 13, 23 and 26, Appellant respectfully asserts that in view of the requested allowance of independent claim 1 over the teachings of *Milnes*, the teachings of *Relihan* as applied to dependent claims 10, 13, 23 and 26 would be inapplicable upon allowance of independent claim 1.

As pointed out in MPEP § 2131, "[t]o anticipate a claim, the reference must teach every element of the claim." "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. Of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Moreover, as pointed out in M.P.E.P. § 2143.03, "[t]o establish prima facie obviousness of a claimed invention, all the claimed limitations must be taught or suggested by the prior art". *In re Royka*, 409 F.2d 981, 180 USPQ 580 (CCPA 1974). Since these criteria have not been met,

Appellant respectfully asserts that the rejections under 35 U.S.C. § 102 (e) and § 103 (a) should be withdrawn because *Milnes* does not teach or suggest each feature of independent claim 1.

In view of the above arguments, Appellant respectfully requests the rejection of independent claim 1 under 35 U.S.C. § 102 be withdrawn. Additionally, claims 2-4, 6-15 and 28, which depend from independent claim 1, are allowable at least because their base claim is allowable, as well as for the additional features recited therein.

Independent claim 16

With regard to independent claim 16, Appellant respectfully asserts that *Milnes* fails to teach or fairly suggest a method of positioning one of an emitter and a detector of a dental X-ray apparatus using an existing digitized dental X-ray image and information concerning the dental X-ray apparatus and assignable to the digitized dental X-ray image, the method including the steps of, at least, "carrying out computation on the basis of the digitized X-ray image, relevant information concerning the dental X-ray apparatus, and a selected area, in order to ascertain control data which controls the dental X-ray apparatus such that the selected area can be depicted in a new dental X-ray image, the information concerning the X-ray apparatus comprises coordinates of the trajectory which have been saved in relation to the digitized X-ray image, and a segment of the trajectory is calculated on the basis of the selected area, and the trajectory gives knowledge of movement of the dental X-ray apparatus carried out at a certain point of time," as recited in independent claim 16 (emphasis added).

Appellant respectfully asserts that independent claim 16 is allowable for at least the reasons presented above for the allowance of independent claim 1, and the additional features recited therein. In the interest of avoiding redundant arguments, the reasons for allowance of independent claim 16 are not repeated herein. Additionally, claims 17-19, 21-27 and 29, which depend from independent claim 16, are allowable at least because their base claim is allowable, as well as for the additional features recited therein.

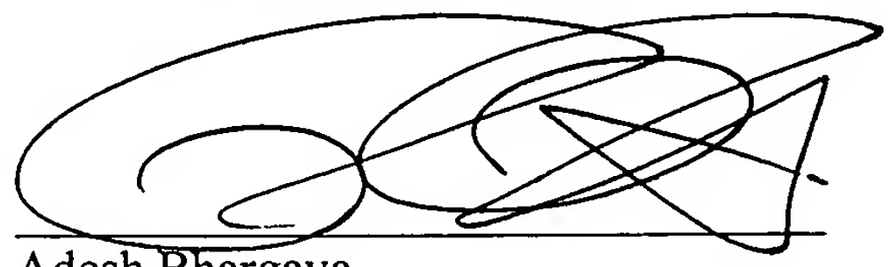
2. Conclusion

In view of the foregoing, Appellant respectfully requests the reversal of the Examiner's rejections and allowance of the pending claims.

If there are any other fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 04-2223. If a fee is required for an extension of time under 37 C.F.R. §1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

DYKEMA GOSSETT PLLC

Dated: December 17, 2007 By: 

Adesh Bhargava
Reg. No. 46,553

DYKEMA GOSSETT PLLC
1300 I Street, N.W., Suite 300 West
Washington, D.C. 20005
(202) 906-8696

DC01\128455.1
ID\ABH